

**Listing of Claims**

1. (Amended) A packet-switched data communication system having a control station and a plurality of remote terminals that communicate ~~on-demand~~ with said control station over a wireless link, said control station comprising a data port for receiving data packets destined for said terminals; means for generating a plurality of carriers forming data channels for carrying said data packets; means for assigning said data packets destined for a particular terminal to one or more of said data channels; means for generating a carrier forming a control channel carrying control information pertaining to said data channels; and means for simultaneously transmitting said carriers carrying said data packets and said control channel to said remote terminals as a radio frequency signal; and each of said terminals comprising a receiver for receiving said radio frequency signal; an analog-to-digital converter for digitizing said received signal; a buffer for storing said digitized received signal; and a processing means for continually monitoring the contents of said buffer to extract control information from said control channel, and said processing means processing said stored signal to extract said packet data destined for said terminal from one or more of said data channels in response to control information received on said control channel identifying said packet data as destined for said terminal.

2. (Amended) A ~~The~~ packet-switched data communication system ~~as claimed in~~ of claim 1, wherein said transmitting means transmits said carriers as a framed baseband signal, each frame containing one or more data channels and the control channel.

3. (Amended) A The packet-switched data communication system ~~as claimed in~~ of claim 2, wherein said buffer stores a frame of raw baseband data.

4. (Amended) A The packet-switched data communication system ~~as claimed in~~ of claim 3, wherein said processing means comprises a digital signal processor.

5. (Amended) A The packet-switched data communication system ~~as claimed in~~ of claim 1, wherein each said terminal further comprises a demodulator for demodulating said received radio frequency signal to a baseband signal prior to analog-to-digital conversion.

6. (Amended) A The packet-switched data communication system ~~as claimed in~~ of claim 5, wherein said demodulator is a quadrature demodulator.

7. (Amended) A The packet-switched data communication system ~~as claimed in~~ of claim 4, wherein said digital signal processor first decimates and then demodulates the control channel.

8. (Amended) A The packet-switched data communication system ~~as defined in~~ of claim 1, wherein said means for assigning data packets includes means to dynamically assign said data packets to one or more channel types.

9. (Amended) A The packet-switched data communication system ~~as defined in~~ of claim 8 wherein said channel types include any one or more of the following: random access channels; assigned TDM channels; assigned TDMA channels; and dedicated channels.

10. (Amended) A method of establishing communication between a control station and one or more of a plurality of mobile terminals over a wireless link in a packet-switched data communications system, the method comprising generating a plurality of carriers forming channels; dynamically assigning one or more data carriers to a destination terminal; modulating said one or more carriers with packet data for said destination terminal; generating a control carrier containing control information pertaining to said modulated carriers; transmitting said data carriers and said control carrier as an aggregate signal to said destination terminal; ~~storing wherein~~ said received aggregate signal is stored in a buffer at said destination terminal; ~~continually extracting~~ said control information is continually extracted from said aggregate signal stored in said buffer at said destination terminal; and extracting packet data is extracted from said buffered stored signal in response to extracted control information ~~received on said control channel~~ identifying that said packet data as destined for said destination terminal.

11. (Amended) ~~A~~ The method as claimed in of claim 10, wherein said aggregate signal is transmitted as a framed signal, each frame containing one or more of said data carriers and said control carrier.

12. (Amended) ~~A~~ The method as claimed in of claim 11, wherein said aggregate signal is stored ~~in said buffer at~~ said destination terminal one frame at a time, and said control information is extracted from said stored frame to determine whether it contains data intended for the destination terminal.

13. (Amended) A ~~The method as claimed in of~~ claim 10, wherein said aggregate signal comprises a baseband signal that is modulated onto a radio frequency carrier.

14. (Amended) A ~~The method as claimed in of~~ claim 13, wherein said radio frequency carrier is first demodulated at said terminals to extract said baseband signal, and said baseband signal is then passed through an analog-to-digital converter prior to being ~~buffered in~~ stored at said destination terminal.

15. (Amended) A ~~The method as claimed in of~~ claim 13, wherein said control carrier is at a frequency located substantially in the center of the received band ~~aggregate radio frequency signal comprised of multiple data carriers and said control carrier.~~

16. (Amended) A ~~The method as claimed in of~~ claim 15, wherein said control carrier is first decimated prior to demodulation.

17. (Amended) A mobile terminal forming part of a packet-switched data communication system having a control station and a plurality of remote terminals that communicate ~~on demand~~ with said control station over a wireless link, said terminal comprising: a receiver for receiving an incoming signal having a control channel containing control information and one or more data channels having data packets; and an analog-to-digital converter for digitizing said received signal; a buffer that stores said digitized received signal, and a processor that continually monitors said stored signal to extract control information from said control channel and extract packet data destined for said terminal from one or more of said data channels in response to the extracted control information received on said control channel identifying said packet data as destined for said terminal.

18. (Amended) ~~A~~The mobile terminal ~~as claimed in~~of claim 17, further comprising a demodulator for demodulating said incoming signal to baseband before said incoming signal is passed to said analog-to-digital converter.

19. (Amended) ~~A~~The mobile terminal ~~as claimed in~~of claim 17, wherein said processor is a digital signal processor.

20. (Amended) ~~A~~The mobile terminal ~~as claimed in~~of claim 19, wherein digital signal processor first decimates said control channel prior to demodulation.

21. (Amended) ~~A~~The mobile terminal ~~as claimed in~~of claim 17 including means to dynamically assign data packets to various channel types for communicating with said control station.

22. (Amended) A packet-switched data communication system comprising:  
a control station comprising:  
a processor that generates a plurality data channels for carrying data packets,  
assigns the data packets to one or more of the data channels, and  
generates a control channel carrying control information pertaining to  
said data channels; and,  
a transmitter for simultaneously transmitting the data channels and the control  
channel as an aggregate signal; and,  
a plurality of remote terminals that communicate with said control station, each of  
said remote terminals comprising:  
a receiver receiving the aggregate signal;

an analog-to-digital converter digitizing the received aggregate signal;  
a storage device ~~buffer~~ storing the digitized received aggregate signal; and,  
a processor continually monitoring the contents of said storage device ~~buffer~~,  
extracting control information from said control channel, and  
extracting data packets destined for said terminal from one or more of  
the data channels in response to the extracted control information  
identifying the packet data as destined for said terminal.

23. (New) The packet-switched data communication system of claim 1, wherein  
said processing means continually monitors the contents of said buffer to extract control  
information from said control channel at the same time that said processing means processes  
said stored signal to extract said packet data destined for said terminal.

24. (New) The method of claim 10, wherein the continually extracting is  
performed at the same time as extracting data from said aggregate signal.

25. (New) The mobile terminal of claim 17, wherein said processor continually  
monitors said stored signal to extract control information from said control channel at the  
same time that said processor extracts packet data destined for said terminal from one or  
more of said data channels.